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10/034,661	12/20/2001	Duane S. Treybig	7560 ONES	1640

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EXAMINER
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METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/034,661	<b>Applicant(s)</b> TREYBIG ET AL.	
	<b>Examiner</b> Daniel S. Metzmaier	<b>Art Unit</b> 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-40 and 42-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 and 42-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-40 and 42-60 are pending.

#### ***Claim Interpretation***

1. The claims 1-40, 42-48 and 60 are drafted in product-by-process format. See MPEP 2113. It is noted that claim 15 employs open language defining the agent or monomer, e.g., amine-containing monomer. The amine compounds are open to more than the two reactive amino hydrogens claimed.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 20-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 18-26 are indefinite since it is unclear what is applicants intended materials since the claim requires an amine capping monomer and an amine alkylating agents, i.e., said amine capping monomer would no longer be an amine capping monomer but a polymeric amine.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-3, 5-10, 15-16, 18-23, 51-53, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Ott et al, US 5,324,404. Ott et al (columns 9-12, grinding resins A1-6) disclose polymer resin compositions employing DER 732 (polypropylene glycol diglycidyl ether from Dow Chemicals) reacted with 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ) and N,N-dimethylaminopropylamine ( $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{NH}_2$ ).

Regarding claim 51, the N,N-dimethylaminopropylamine reads on the capping amine monomer and the alkylating agent is indistinct from the reaction products having complete reaction of the diglycidyl ethers or epihalohydrin capped diols since the product structures are indistinct and the halogen is a reaction by-product. Attention is further directed to claim 60(3).

Claim 60 is included in this rejection since 2,2'-aminoethoxyethanol reads on claim 60, 1)(b); when R1 is  $(-\text{CH}_2-\text{CH}_2-\text{O}-)_n$ ,  $n = 2$  and Z1 = H. DER 732 reads on components 2) and 3), which are indistinct in the final product when R8 is 2-hydroxy-3-chloropropyl. The terminal halogens would react and expected to form the same reaction products as the diglycidyl ethers. Said products reactive with the free amine nitrogens and forming a 2-hydroxypropyl linkage.

6. Claims 15-16, 18-19, 26, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Starner, US 5,591,812. Starner (columns 3-4; examples and claims) disclose the reaction products of methylamine and polyglycidyl ethers. When the value of m (structure at column 3, lines 60) is greater than 1, the intermediate compound defined by  $m = 1$  has two reactive aminohydrogens and a tertiary amine. The product

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resulting from said compounds m > 1 read on the product by process polymer compositions.

Starner (column 5, lines 10-22) disclose the use of alcohol as a solvent and the compounds are tested by reacting with an acid (column 8, lines 15-25). The products resulting from diglycidyl ethers read on alkylating agents as defined. Attention is directed to claim 60 wherein the N-alkylating agents would result in the same products as the diglycidyl ethers when R8 is 2-hydroxy-3-chloropropyl.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 6-10, 18-23, and 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ott et al, US 5,324,404. Ott et al (columns 9-12, grinding resins A1-

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6) disclose polymer resin compositions employing DER 732 (polypropylene glycol diglycidyl ether from Dow Chemicals) reacted with 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ) and N,N-dimethylaminopropylamine ( $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{NH}_2$ ).

Ott et al differs from the claims in the use of a particular polyglycidyl ether, complete reaction of the polyglycidyl ether to form the same reaction product of N-alkylating agents when the N-alkylating agents are capped with 2-hydroxy-3-chloropropyl, or the residual by-product chloride or bromide resulting from N-alkylating agents are capped with 2-hydroxy-3-chloropropyl.

Ott et al (column 6, lines 27 et seq; particularly lines 55 and 62-65) disclose a number of polyglycidyl ether or polyepoxides including but not limited to those derived from epihalohydrins, glycerol, and polyepoxide derived from the epoxidation of olefins.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the polyglycidyl ether or polyepoxides taught in the Ott et al reference as an obvious functional equivalent to the DER 732 or the epoxy resins exemplified.

To the extent the Ott et al reference differs in that the reaction of the polyglycidyl ethers are incomplete, less than 100%, or the compositions contain some residual by-product halogen, the Ott et al reference teaches the use of alternative polyglycidyl ethers and/or polyepoxides derived from epihalohydrins. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the materials derived from epihalohydrins as an obvious functional equivalent to the polyglycidyl ethers and/or polyepoxides exemplified, which would have resulted in

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polymer compositions having the same or substantially the same structure. See MPEP 2113.

10. Claims 15-23, 26, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marten et al, US 5,585,446. Marten et al (abstract; column 3, lines 54 et seq; column 4, lines 23 et seq and column 4, lines 56 et seq; column 7, lines 32 et seq; examples; and claims) disclose epoxy resin compositions, which react to form the polymeric reaction product. Said composition comprising JEFFAMINE monoamines (see claims 21 and 22), and aliphatic polyepoxides. Marten et al (column 7, lines 32 et seq) clearly contemplates reactants having tertiary amines and having two amino hydrogens and a tertiary amine, e.g., N-aminoethylpiperazine. Claim 15 employs open language when defining the amine-containing monomers. Said recitation would not exclude further aminoreactive hydrogens. Marten et al (column 4, lines 44 et seq) disclose compounds reading on the N-alkylating agents including glycidyl ethers of alkoxyated lauryl alcohols. Marten et al discloses the polymers broadly employing reactant species reading on applicants' species and therefore reaction products thereof.

Claim 60 is included in this rejection since JEFFAMINE M-1000 reads on claim 60, 1)(b). Marten et al (column 4, lines 23 et seq) disclose polyglycidyl ether compounds reads on components 2) and products resulting from claim 60, 3), which are indistinct in the final product when R8 is 2-hydroxy-3-chloropropyl. The terminal halogens would react and expected to form the same reaction products as the diglycidyl ethers. Said reaction products wherein the free amine nitrogens are reactive to form a 2-hydroxypropyl linkage.

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Marten et al differs from the compositions in the exemplified compositions having each of the species in the claimed combinations or the compositions with sufficient specificity.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the individual agents and/or components or combinations of said agents and/or components for their disclosed advantageous function taught in the Marten et al reference.

### ***Double Patenting***

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-40 and 42-60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 and 8-13 of U.S. Patent No. 6,569,983. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed invention substantially overlap each other, the claims are generic and the particular species are disclosed and within the claimed genus. Since the instant claims and patentees' claims are both



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drafted in product-by-process format and the instant process claims 51-59 are indistinct from the process set forth in the product claims, said process claims have been included herein as an obvious in view of the product claims.

Claims 49 and 50 have been included herein since the effective amounts added substantially overlap and the active method step instantly claimed is charging, which is deemed to read on injecting of the patented claims.

### ***Response to Arguments***

13. Applicant's arguments filed February 1, 2006 have been fully considered but they are not persuasive.

14. Applicants (page 20 of response) assert the Ott et al reference discloses different polymers than those instantly claimed. This has not been deemed persuasive for the following reasons:

(1) The instant claims are drafted in product-by-process format and the polymers are examined based on the product rather than the method said polymer is made.

Applicants have not shown the products to be distinct.

(2) The claims employ open transitional language and do not exclude any further ingredients in the making of the polymers formed. Said polymers have not been shown to be distinct.

(3) All the elements of the instant claimed product-by-process limitations are disclosed in the reference.

(4) The Ott et al reference teaching of primary amino groups reads on the claimed amine having two active amino hydrogens selected from 2-(2-aminoethoxy) ethanol, which is 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ).

(5) Applicants do not specifically address the polymers made in the examples cited in the rejection, i.e., columns 9-12, resins A1-6.

15. Applicants (page 20) assert regarding Starner that the polymers of the instant invention have tertiary amines in the polymer backbone. This has not been deemed persuasive for the following reasons:

(1) Applicants attention is directed to the structures set forth in the Starner reference. More specifically, see column 3, lines 55 et seq, which shows tertiary amines in the polymer backbone wherein m can be up to 3.

(2) The instant claims are devoid of any component concentrations and the scope of the claims have not been shown to clearly have pendent tertiary amine groups.

(3) Columns 3 and 4 of Starner discloses structures wherein the compounds have glycidyl ether groups that have been terminated with an amine having one or two reactive amino-hydrogens as required in claim 16.

Applicants arguments regarding claim 16 have not been deemed persuasive since the process said polymers are made have not been shown to necessarily produce different polymers. The Starner polymers are terminated by amine capping groups.

While applicants assert claim 60 is directed to highly branched polymer resulting from alkylation of amino groups, the claim makes no mention of the concentrations,

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branched structure or the particular order of reaction that may result in the asserted structure.

Applicants (page 21) assert Starner cannot disclose the claimed polymers of claim 26, however Starner (column 5, lines 10-21) specifically teaches solvents including alcohol and (line 59) the use of amidoamines, which could be made by reaction of an acid and an amine.

16. Applicants (page 22) assert Marten provides no basis for the selection of an amine hardener having two reactive amino hydrogens and a tertiary amine group from among the list of hardeners. Marten list specific examples that read on the broadly claimed amines having two amino hydrogens and a tertiary amine group. Said disclosure is *prima facie* obvious for the disclosed function of Marten. Applicants further assert unexpected benefits of the tertiary amino groups in the backbone of the polymer and Marten does not teach said results (applicants cite instant page 7, lines 16-24). Applicants citation does not teach unexpected results but discloses alkylating points in the polymer for the asserted novel demulsifier.

This has not been deemed persuasive for the following reasons. The claims define a polymer in product-by-process format. See above claim interpretation. The claims do not limit the polymers to demulsifiers or specific structures. Applicants arguments are not commensurate in scope with the claims.

Applicants make a similar argument regarding the diepoxide polyethers. This has not been deemed persuasive since Marten discloses a number of diepoxides known in the epoxy art to include the diepoxide ethers. The use thereof would have

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been *prima facie* obvious in for the same reasons set forth regarding the amines in the preceding paragraph.

Applicants assert Marten does not suggest capping the polymer with specific amines. This has not been deemed persuasive since the claims make no mention of the concentrations, specific structure or the particular order of reaction steps that may result in the asserted structure.

Regarding capping the polymers as asserted (page 22), Marten clearly contemplates a change in the order of addition and/or simultaneous addition. The claim makes no mention of the concentrations or structure that may result in a patentably distinct structure. Some capping would have been expected in the Marten materials. Applicants arguments are not commensurate in scope with the claims.

Applicants (page 22) argue regarding claim 60 Marten does not teach the use of the specific diepoxides. This has not been deemed persuasive since Marten discloses a number of diepoxides known in the epoxy art to include the epoxides claimed. The use thereof would have been *prima facie* obvious in for the same reasons set forth regarding the amines above, i.e., the claims are generic to polymers, said claims are in product-by-process format without concentrations or specific structures, and the epoxides are specifically mentioned.

Applicants (pages 22 and 23) argue regarding claim 60 Marten does not teach the use of alcohols and acids. Please see at least the disclosure of accelerators at column 8, lines 40 et seq, which discloses both. It is further noted that applicants arguments are not commensurate in scope with the claims.

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Regarding applicants inability to find reference in Marten of C1-6 alcohol, please see at least column 8, line 52 to the use of phenols, which is a C6 alcohol, and line 47 to the generic use of diluents, which C1-6 alcohols are known epoxide composition diluents. See Starner above, column 5, lines 10 et seq, as an example.

17. Applicants assert the intent to file a terminal disclaimer but none has yet been filed. The ODP rejection is deemed proper and has been maintained.

### ***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM